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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/585,808

04/30/2007

Howard Matthew Colquhoun

JMYT-369US

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EXAMINER

THOMAS, JAISON P

ART UNIT

PAPER NUMBER

1796

MAIL DATE

DELIVERY MODE

06/26/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/585,808	Applicant(s) COLQUHOUN ET AL.	
	Examiner Jaison P. Thomas	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 April 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>07/06</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3 and 6-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over McGrath et al. (WO 02/25764).

The polymer shown on pg.3, lines 10-17 contain a phenylene backbone wherein one segment of the polymer contains sulfonic acid groups on two phenylene monomers (i.e. the sulfonated activated aromatic monomer) and the remaining segment comprised of 2 phenylene monomers is unsubstituted (i.e the activated aromatic monomer) wherein the groups connecting the monomers are electron-withdrawing in nature and include sulfone and ketone groups. The ratio of sulfonated activated aromatic monomer to activated aromatic monomer is 0.001 to 0.999 (pg. 11, line 9). Table 1 on pg. 19 shows viscosities of the polymer created which are comprised of 10 monomers each which the Examiner construes as meeting equivalent weight limitations of Claim 11. The materials are described to be used proton conductive membranes in fuel cells (pg. 22, lines 14-16).

McGrath is relied upon as disclosed above. McGrath, however, does not teach embodiments of the polymer being used as an electrocatalyst layer or used in a membrane electrode assembly.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the proton conductive polymer in a electrocatalyst or membrane electrode assembly since such embodiments are notoriously well known in the art to be used in conjunction with proton conductive membranes to produce fuel cells and such embodiments do not define a patentably distinction over the prior art.

3. Claims 1-8,13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rose (EP 0008894).

Rose teaches a sulfonated polyethersulphone copolymer comprised of repeat units of "A" which is sulfonated arylene segment connected by ether and sulfone groups and "B" which is an unsulfonated arylene segment comprised 4 arylenes connected by ether and sulfone groups (Abstract). The copolymer can be comprised of 1 to 99 mole % of segment A and 99 to 1 mole % of segment B (pg. 2, lines 17-21). Claim 7 teaches an embodiment of the polymer used as a membrane (Claims, pg. 2).

4. Claims 1-10 and 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shinoda et al. (US Patent Application Pub. No. 2002/0187377).

Shinoda et al. teaches a polymer electrolyte containing arylene segments and a disulfonylimide segment. The structure is described in Formula (1) on pg. 1, para. 0007-0008. Ar¹ and Ar² and R¹ and Y are defined in para. 0014-0016 where R¹ can be sulfonic acid (para. 0015) and Y is either an ether, sulfide, ketone or sulfone linkage. Para. 0096 describes a fuel cell

embodiment using the polymer membranes of the invention and para. 0076 and 0079 describe number average molecular weights of the polymer membranes.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jaison P. Thomas whose telephone number is (571) 272-8917. The examiner can normally be reached on Mon-Fri 9:30 am to 6:00 pm.

6. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. P. T./
Examiner, Art Unit 1796

/DOUGLAS MC GINTY/
Primary Examiner, Art Unit 1796